

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

Claim 1 (Currently Amended): An injection molding machine with a vertically displaceable closing unit, comprising:  
a plate-like lower yoke as a counterpressure plate;  
a plate-like upper yoke as a stationary mold clamping plate;  
at least three vertically aligned struts connecting the lower yoke and the upper yoke with each other in their marginal zones in a force-locked manner;

another plate-like element serving as a displaceable mold clamping plate, said another plate-like element being displaceable on the struts;

one or more driving cylinders for displacing said displaceable mold clamping plate, said cylinders being connected to said displaceable mold clamping plate and the counterpressure plate, in a manner such that single- or multi-component molding tool halves arranged on surfaces of the mold clamping plates facing each other are driven from a maximum spacing into a position of mutual abutment, and vice-versa; and

a piston-cylinder system acting between the counterpressure plate and the displaceable mold clamping plate for generating a required closing pressure;

wherein the piston-cylinder system is acted upon by a fluid medium, said piston-cylinder system, in an abutting position, being retractable and extendable in a horizontal direction from an external space of a closing unit (3) between the counterpressure plate (4) and the displaceable mold clamping plate (5), and wherein the piston-cylinder system is adapted to be filled with or drained with the fluid medium to create a stroke volume, and wherein the system is adapted to receive different amounts of the fluid medium at different time intervals as a pre-tensioning volume for generating the closing pressure so as to be able to adapt a starting height of the piston-cylinder system (2) to different heights of the molding tool and wherein a lower bottom surface (25) of the piston-cylinder system (2) facing the counterpressure plate (4) is directly displaced on the counterpressure plate (4) and a support plate (12) extending an upper cover surface (11) of said counterpressure plate and wherein a lower bottom surface (25) of the piston-cylinder system (2) facing the counterpressure plate (4) is displaced on the counterpressure plate (4) and support plate (12) by means of wheel or roller elements (22, 23) mounted on the piston-cylinder

system or in or on the counterpressure plate (4) and support plate (12), wherein the wheel- or roller elements (22, 23) each are supported so that the piston-cylinder system (2) is positioned on the counterpressure plate (4) in its working position between the counterpressure plate (4) and the displaceable mold clamping plate (5).

Claim 2 (Canceled).

Claim 3 (Previously Presented): The injection molding machine according to claim 1, wherein the machine has one common chamber for receiving the stroke volume and the pre-tensioning volume.

Claim 4 (Previously Presented): The injection molding machine according to claim 3, wherein the machine controls the stroke volume by controlling the amount of fluid medium flowing in and out for generating the closing pressure.

Claim 5 (Original): The injection molding machine according to claim 1, wherein a hydraulic fluid is used as the fluid medium.

Claim 6 (Original): The injection molding machine according to claim 1, wherein the piston-cylinder system (2) is retracted into and extended from the closing unit (3) by one or more piston-cylinder units (50) having a horizontal longitudinal axis.

Claim 7 (Original): The injection molding machine according to claim 1, wherein the piston-cylinder system (2) is retracted into and extended from the closing unit (3) by means of one or more electric motor-driven spindle drives having a horizontal longitudinal axis.

Claim 8 (Previously Presented): The injection molding machine according to claim 1, wherein the piston-cylinder system (2) is retracted into and extended from the closing unit (3) by means of one or more electric motor-driven gear-and-rack drives having a horizontal longitudinal axis.

Claim 9: (Canceled).

Claim 10 (Currently Amended): The injection molding machine according to claim 9 1, wherein a surface of the counterpressure plate (4) and the support plate (12) coming into contact with the

lower bottom surface (25) of the piston-cylinder system (2) has the form of a flat bed (14).

Claim 11 (Currently Amended): The injection molding machine according to claim 9 1, wherein at least a surface of the counterpressure plate (4) and support plate (12) coming into contact with the lower bottom surface (25) of the piston-cylinder system (2), and the lower bottom surface (25) of the piston-cylinder system, are subjected to a surface treatment for reducing the coefficient of friction.

Claim 12 (Currently Amended): The injection molding machine according to claim 9 1, wherein a lubricant is admitted into an area between the counterpressure plate (4) and support plate (12), and the lower bottom surface (25) of the piston-cylinder system (2).

Claim 13: (Canceled).

Claim 14 (Currently Amended): The injection molding machine according to claim ~~13~~ 1, wherein the wheel or roller elements (23) are supported by hydraulic or pneumatic piston-cylinder units (33) with vertical longitudinal axes in or on the lower



elements (22, 23), grooves (34, 36), guide pins and roll-off surfaces (24).

Claim 17 (Previously Presented): ~~The injection molding machine according to claim 9;~~ An injection molding machine with a vertically displaceable closing unit, comprising:

a plate-like lower yoke as a counterpressure plate;

a plate-like upper yoke as a stationary mold clamping plate;

at least three vertically aligned struts connecting the lower yoke and the upper yoke with each other in their marginal zones in a force-locked manner;

another plate-like element serving as a displaceable mold clamping plate, said another plate-like element being displaceable on the struts;

one or more driving cylinders for displacing said displaceable mold clamping plate, said cylinders being connected to said displaceable mold clamping plate and the counterpressure plate, in a manner such that single- or multi-component molding tool halves arranged on surfaces of the mold clamping plates facing each other are driven from a maximum spacing into a position of mutual abutment, and vice-versa; and

a piston-cylinder system acting between the counterpressure plate and the displaceable mold clamping plate for generating a required closing pressure;

wherein the piston-cylinder system is acted upon by a fluid medium, said piston-cylinder system, in an abutting position, being retractable and extendable in a horizontal direction from an external space of a closing unit (3) between the counterpressure plate (4) and the displaceable mold clamping plate (5), and wherein the piston-cylinder system is adapted to be filled with or drained with the fluid medium to create a stroke volume, and wherein the system is adapted to receive different amounts of the fluid medium at different time intervals as a pre-tensioning volume for generating the closing pressure so as to be able to adapt a starting height of the piston-cylinder system (2) to different heights of the molding tool and wherein a lower bottom surface (25) of the piston-cylinder system (2) facing the counterpressure plate (4) is directly displaced on the counterpressure plate (4) and a support plate (12) extending an upper cover surface (11) of said counterpressure plate, wherein the piston-cylinder system (2) is connected in a bottom zone in a force-locked manner with a piston rod (51) of a horizontally actuated hydraulic or pneumatic piston-cylinder device (50) via a rigid strutting (54), said piston rod being guided outside of the



cylinder device by means of a smooth tube (52, 53) being slotted over its length for the passage of the rigid strutting (54), said tube being horizontally arranged in or underneath the support plate (12) and in the counterpressure plate (4).

Claim 18 (Previously Presented): ~~The injection molding machine according to claim 9,~~ An injection molding machine with a vertically displaceable closing unit, comprising:

a plate-like lower yoke as a counterpressure plate;

a plate-like upper yoke as a stationary mold clamping plate;

at least three vertically aligned struts connecting the lower yoke and the upper yoke with each other in their marginal zones in a force-locked manner;

another plate-like element serving as a displaceable mold clamping plate, said another plate-like element being displaceable on the struts;

one or more driving cylinders for displacing said displaceable mold clamping plate, said cylinders being connected to said displaceable mold clamping plate and the counterpressure plate, in a manner such that single- or multi-component molding tool halves arranged on surfaces of the mold clamping plates facing each other are driven from a maximum spacing into a position of mutual abutment, and vice-versa; and

a piston-cylinder system acting between the counterpressure plate and the displaceable mold clamping plate for generating a required closing pressure;

wherein the piston-cylinder system is acted upon by a fluid medium, said piston-cylinder system, in an abutting position, being retractable and extendable in a horizontal direction from an external space of a closing unit (3) between the counterpressure plate (4) and the displaceable mold clamping plate (5), and wherein the piston-cylinder system is adapted to be filled with or drained with the fluid medium to create a stroke volume, and wherein the system is adapted to receive different amounts of the fluid medium at different time intervals as a pre-tensioning volume for generating the closing pressure so as to be able to adapt a starting height of the piston-cylinder system (2) to different heights of the molding tool and wherein a lower bottom surface (25) of the piston-cylinder system (2) facing the counterpressure plate (4) is directly displaced on the counterpressure plate (4) and a support plate (12) extending an upper cover surface (11) of said counterpressure plate, wherein the lower bottom surface (25) of the piston-cylinder system (2) comprises pocket-like recesses (55) each accommodating a nozzle (56), to which a highly pressurized gaseous pressure medium is admitted.

Claim 19 (Previously Presented): The injection molding machine according to claim 18, wherein compressed air is used as the gaseous medium.

Claim 20 (Original): The injection molding machine according claim 9 1, wherein the piston-cylinder system (2) is mounted on a transport plate (20) and connected with said transport plate with a force-locked connection, wherein an underside of the transport plate (20) forms the lower bottom surface (25) of the piston-cylinder system (2).

Claim 21 (Original): The injection molding machine according to claim 20, wherein the force-locked connection between the piston-cylinder system (2) and the transport plate (20) is detachable.